# Alcatel-Lucent OmniSwitch 6850

STACKABLE LAN SWITCH

The Alcatel-Lucent OmniSwitch™ 6850 Stackable LAN Switch family offers versatile, fixed-configuration layer-3 Gigabit and 10 Gigabit Ethernet switches, which provide advanced services, high performance, and exceptional value. All of the models in the family are stackable and perform wire-rate, Gigabit switching and routing for both IPv4 and IPv6, delivering intelligent services to the edge of the network with optimal quality of service (QoS) and integrated security, as well as network access control (NAC).

| FEATURES | BENEFITS |
|---|---|
| Versatile features and models offering Gigabit and 10 Gigabit interfaces, IEEE 802.3af-compliant Power over Ethernet (PoE), and 10/100 models upgradable to Gigabit with a software license | With the variety of interfaces and models, the OmniSwitch 6850 family meets any customer configuration need and offers excellent investment protection and flexibility, as well as ease of deployment, operation and maintenance. |
| High availability: Resiliency of the OmniSwitch 6850 is provided through a superior architecture – virtual chassis design with redundant stacking links, primary/secondary unit failover, hot-swappable power options and configuration rollback. | A field-upgradable solution that allows for optimum network availability, reduces operating complexity and cost, and optimizes response time for users and applications |
| Wire-rate performance for switching and routing at Gigabit and 10 Gigabit speeds. Advanced services are incorporated in the operating system; for example, QoS, access control lists (ACLs), L2/L3, VLAN stacking, and IPv6. | Outstanding performance when supporting real-time voice, data, and video applications for converged scalable networks |
| Low power consumption and dynamic PoE allocation | The OmniSwitch 6850 provides efficient power management, reduces operating expenses and lowers total cost of ownership (TCO) through the lowest power consumption in its class and dynamic PoE allocation, which delivers only the power needed by the attached device. |
| Superior user and network security feature set | Enhanced security is fully integrated in the operating system and is adaptive to user mobility, and has comprehensive admission control, intrusion detection, containment and remediation at the edge of the network at no additional cost. |
| Advanced, out-of-the-box auto-configuration, Link Layer Discovery Protocol (LLDP) network policies and dynamic VLAN allocation | Automated switch setup and configuration and end-to-end VLAN provisioning support cost-effective installation and deployment |
| Ready for Metro Ethernet access: VLAN stacking, multicast switching, Dynamic Host Configuration Protocol (DHCP) snooping/option 82, Y.1731, IEEE 802.1ag, IEEE 802.3ah and MAC-Forced Forwarding (MEF 9/14 complaint) | Simplifies Metro Ethernet service providers' network operations, administration and management |

## Alcatel-Lucent OmniSwitch 6850 models

The OmniSwitch 6850 family offers customers an extensive selection of Gigabit and 10 Gigabit fixed-configuration switches including models supporting PoE. Within the selection there are the "L" models, also referred to as the "light" models. These models are Fast Ethernet switches that can be upgraded to Gigabit without changing the hardware and offer complete layer-2 and layer-3 feature sets.

### Switch configurations

All models in the family are stackable by two 10 Gigabit dedicated stacking links. They can be optionally equipped with Alcatel-Lucent-approved Small Form Factor Pluggable (SFP) transceivers, which support short, long, and very long distances.

**Table 1. OmniSwitch 6850 models and power supplies**

| MODEL NAME | DESCRIPTION | POWER SUPPLIES SUPPORTED |
|---|---|---|
| **NON-PoE MODELS** | | |
| OS6850-24 | 20 Ethernet 10/100/1000 RJ-45 ports, four combo ports, and two stacking ports | 126 W AC or 120 W DC |
| OS6850-24X | 20 Ethernet 10/100/1000 RJ-45 ports, two 10 Gigabit uplinks, four combo ports, and two stacking ports | 126 W AC or 120 W DC |
| OS6850-48 | 44 Ethernet 10/100/1000 RJ-45 ports, four combo ports, and two stacking ports | 126 W AC or 120 W DC |
| OS6850-48X | 48 Ethernet 10/100/1000 RJ-45 ports, two 10 Gigabit uplinks, and two stacking ports | 126 W AC or 120 W DC |
| OS6850-U24X | 22 Ethernet 100/1000 Base-X SFP ports, two 10 Gigabit uplinks, two combo ports, and two stacking ports | 126 W AC or 120 W DC |
| OS6850-24L* | 20 Ethernet 10/100 RJ-45 ports, four combo ports, and two stacking ports | 126 W AC or 120 W DC |
| OS6850-48L* | 44 Ethernet 10/100 RJ-45 ports, four combo ports, and two stacking ports | 126 W AC or 120 W DC |
| **PoE MODELS** | | |
| OS6850-P24 | 24 PoE ports – 20 Ethernet 10/100/1000 RJ-45 ports, four combo ports, and two stacking ports | 360 W or 510 W AC |
| OS6850-P24X | 24 PoE ports – 20 Ethernet 10/100/1000 RJ-45 ports, two 10 Gigabit uplinks, four combo ports, and two stacking ports | 360 W or 510 W AC |
| OS6850-P48 | 48 PoE ports – 44 Ethernet 10/100/1000 RJ-45 ports, four combo ports, and two stacking ports | 360 W or 510 W AC |
| OS6850-P48X | 48 PoE ports – 48 Ethernet 10/100/1000 RJ-45 ports, two 10 Gigabit uplinks, and two stacking ports | 360 W or 510 W AC |
| OS6850-P24L* | 24 PoE ports – 20 Ethernet 10/100 RJ-45 ports, four combo ports, and two stacking ports | 360 W or 510 W AC |
| OS6850-P48L* | 48 PoE ports – 44 Ethernet 10//100 RJ-45 ports, four combo ports, and two stacking ports | 360 W or 510 W AC |

Note: Combo ports are ports individually configurable to be 10/100/1000Base-T or 1000Base-X that can support SFP transceivers for short, long, and very long distances.
* The 10/100 RJ-45 ports can be upgraded to 10/100/1000 speed by purchasing the OS6850-24L-UPGD or OS6850-48L-UPGD software license for 24-port and 48-port models respectively.

### Power supplies

The OmniSwitch 6850 family offers redundant, dual, field-replaceable power supplies. Main and backup power supplies are modular, hot-swappable and either directly connected to the rear of the unit or remotely mounted.

**Table 2. OmniSwitch 6850 power supply dimensions**

| NON-PoE PS MODELS | DESCRIPTION | DIMENSIONS (W x D x H) | WEIGHT |
|---|---|---|---|
| OS6850-BP-D | Modular 120-W -48-V DC power supply<br>Provides system power | 16 cm x 17.5 cm x 4.4 cm<br>(6.3 x 6.9 x 1.73 in) | 2.09 lb (0.95 kg ) |
| OS6850-BP | Modular 126-W AC power supply<br>Provides system power | 16 cm x 17.5 cm x 4.4 cm<br>(6.3 in x 6.9 in x 1.73 in) | 2.45 lb (1.11 kg ) |
| **PoE PS MODELS** | | | |
| OS6850-BP-P | Modular 360-W AC power supply<br>Provides system and up to 230 W of PoE power | 16 cm x 17.5 cm x 4.4 cm<br>(6.3 in x 6.9 in x 1.73 in) | 3.22 lb (1.46 kg ) |
| OS6850-BP-PH | Modular 510-W AC power supply<br>Provides system and up to 380 W of PoE power | 32 cm x 17.5 cm x 4.4 cm<br>(12.6 in x 6.9 in x 1.73 in) | 5.71 lb (2.59 kg ) |
| Power supply shelf | Comes with every bundle and holds one 510-W AC or two 360-W AC, 126-W AC, or 120-W DC power supplies | 35.3 cm x 21 cm x 4.4 cm<br>(13.9 in x 8.3 in x 1.73 in) | 1.26 lb (0.57 kg ) |

Any power supply can be remotely connected by a cable included in the bundle. This enables rack mounting with the mounting ears provided with the unit. This feature allows for deployment in reduced depth, for example, in a wall-mounted cabinet.

## Technical specifications

### Physical dimensions

- Chassis size without power supply and shelf:
  - ¬ Width: 44.0 cm (17.32 in)
  - ¬ Depth: 27.0 cm (10.63 in)
  - ¬ Height: 4.4 cm (1.73 in)
- Total size including power supply and shelf:
  - ¬ Width: 48.2 cm (19.00 in)
  - ¬ Depth: 44.6 cm (17.56 in)
  - ¬ Height: 4.4 cm (1.73 in)

### Acoustic levels of switch and power supply

- Under 44 dB for all models, measured with a single power supply at room temperature

### Environmental requirements of switch and power supply

- Operating temperature: 0°C to +45°C (32°F to 113°F)
- Storage temperature: -10°C to +70°C (14°F to 158°F)
- Humidity (operating and storage): 5% to 95% non-condensing
- Cyclic temperature and humidity tests of -5°C to +55°C, 5% to 90% Relative Humidity (RH) for the duration of ~185 hours as per GR-63-CORE

**Table 3. OmniSwitch 6850 power consumption, heat dissipation and weights**

| PRODUCT | MTBF (HOURS) | POWER CONSUMPTION (WATTS)* | HEAT DISSIPATION (BTU/HOUR)** | WEIGHTS (CHASSIS ONLY) |
|---|---|---|---|---|
| **PoE MODELS** | | | | |
| OS6850-P24 | 153,497 | 82 | 279 | 8.62 lb (3.91 kg) |
| OS6850-P24X | 148,929 | 85 | 289 | 8.86 lb (4.02 kg) |
| OS6850-P48 | 128,390 | 152 | 517 | 9.39 lb (4.26 kg) |
| OS6850-P48X | 119,750 | 171 | 584 | 9.59 lb (4.35 kg) |
| **NON-PoE MODELS** | | | | |
| OS6850-24 | 200,421 | 55 | 188 | 8.36 lb (3.79 kg ) |
| OS6850-24X | 191,695 | 58 | 198 | 8.86 lb (4.02 kg ) |
| OS6850-48 | 162,844 | 97 | 331 | 9.39 lb (4.26 kg ) |
| OS6850-48X | 149,608 | 117 | 399 | 9.59 lb (4.35 kg ) |
| OS6850-U24X | 207,199 | 119 | 406 | 8.00 lb (3.63 kg) |

* Calculated maximum power consumption. The power consumed by the power device attached to the PoE port is not included.
** Under full traffic load

### Interface and speeds

- 24 and 48 ports 10/100/1000, 24 ports 100/1000 Base-X
- Wire rate at layer-2 and layer-3 on all ports
- Two built-in 10 Gb/s full-duplex stacking ports
- Switching throughput:
  - ¬ 24 port: 35.7 million packets per second (Mp/s)
  - ¬ 24 port with two 10 GigE ports: 65.5 Mp/s
  - ¬ 48 port: 71.4 Mp/s
  - ¬ 48 port with two 10 GigE ports: 101.2 Mp/s
- Stacking capacity:
  - ¬ 40 Gb/s per unit, up to 320 Gb/s per stack

## Indicators

### Per-port LEDs

- 10/100/1000: PoE, link/activity
- SFP: link/activity
- XFP: link/activity

### System LEDs

- Switch ID (indicates the stack ID of the unit in the stack: 1 to 7)
- System (OK) (chassis HW/SW status)
- PWR (primary power supply status)
- PRI (virtual chassis primary)
- BPS (backup power status)

## Compliance and certifications

### Commercial

***EMI/EMC***

- FCC CRF Title 47 Subpart B (Class A)*
- VCCI (Class A)*
- AS/NZS 3548 (Class A)*
- CE marking for European countries (Class A)*
- EN 55022:2006 (Emission Standard)
- EN 61000-3-3:1995+A2:2005
- EN 61000-3-2:2006
- EN 55024:1998+A1:2001+A2:2003 (Immunity Standards)
  - ¬ EN 61000-4-2: 1995+A1:1998+A2:2001
  - ¬ EN 61000-4-3:2006
  - ¬ EN 61000-4-4:2004
  - ¬ EN 61000-4-5:2006
  - ¬ EN 61000-4-6:2007
  - ¬ EN 61000-4-8:1993+A1:2001
  - ¬ EN 61000-4-11:2004
- IEEE802.3: Hi-Pot Test (2250 V DC on all Ethernet ports)

### NEBS**

- GR-63-CORE (temperature, humidity, altitude, contamination)
- GR-1089-CORE Issue 4 (section 2-3)
- GR-1089-CORE Issue 4 (section 3.2, 4-10)

### Safety agency certifications

- US UL 60950
- IEC 60950-1:2001; all national deviations
- EN 60950-1:2001; all deviations
- CAN/CSA-C22.2 No. 60950-1-03
- NOM-019 SCFI, Mexico
- AS/NZ TS-001 and 60950:2000, Australia
- UL-AR, Argentina
- UL-GS Mark, Germany
- EN 60825-1 Laser
- EN 60825-2 Laser
- CDRH Laser

* Note: Class A with UTP cables
** NEBS certifications received for all non-PoE models

## Detailed product features

### Simplified manageability

***Management interfaces***

- Intuitive, familiar Alcatel-Lucent CLI reduces training costs
- Easy-to-use, point-and-click, web-based element manager (WebView) with built-in help for easy configuration
- Integration with Alcatel-Lucent OmniVista™ products for network management
- Full configuration and reporting using SNMPv1/2/3 across all OmniSwitch families to facilitate third-party network management system integration
- Remote switch access using Telnet or Secure Shell (SSH)
- File upload using USB, TFTP, FTP, SFTP, or SCP for faster configuration
- Human-readable ASCII-based configuration files for off-line editing, bulk configuration and out-of-the-box auto-provisioning

***Monitoring and troubleshooting***

- Local (on the flash) and remote server logging: Syslog and command log
- Port-based mirroring for troubleshooting and lawful interception; supports four sessions with multiple sources-to-one destination
- Policy-based mirroring allows selection of the type of traffic to mirror by using QoS policies
- Remote port mirroring facilitates passing mirrored traffic through the network to a remotely connected device
- Port monitoring feature allows capture of Ethernet packets to a file to assist in troubleshooting
- sFlow v5 and RMON for advanced monitoring and reporting of statistics, history, alarms, and events
- IP extended tools: ping and trace route
- Y.1731 and IEEE 802.1ag Ethernet operations, administration and maintenance (OA&M): Connectivity Fault Management and performance measurements (layer-2 ping and link trace)
- IEEE 802.3ah Ethernet in the First Mile (EFM) for link monitoring, remote fault detection, and loopback control (layer-1 ping)
- Unidirectional Link Detection (UDLD) detects and disables unidirectional links on fiber optic interfaces
- Digital Diagnostic Monitoring (DDM) provides real-time diagnostics of fiber connections for early detection of optical signal deterioration

***Network configuration***

- Auto-negotiating 10/100/1000 ports automatically configure port speed and duplex setting
- Auto MDI/MDIX automatically configures transmit and receive signals to support straight-through and crossover cabling
- BOOTP/DHCP client with option 60 allows auto-configuration of the switch for simplified deployment
- DHCP relay to forward client requests to a DHCP server
- Alcatel-Lucent Mapping Adjacency Protocol (AMAP) for building topology maps
- IEEE 802.1AB LLDP with MED extensions for automated device discovery and IP phone provisioning
- Multiple VLAN Registration Protocol (MVRP and GVRP) for 802.1Q/1ak-compliant VLAN pruning and dynamic VLAN creation
- Auto QoS for switch management and IP phone traffic
- Network Time Protocol (NTP) for network-wide time synchronization

## Resiliency and high availability

- ITU-T G.8032 Ethernet Ring Protection designed for loop protection and fast convergence times (sub 50 ms) in ring topologies
- Ring Rapid Spanning Tree Protocol (RRSTP) optimized for ring topology to provide less than 100-ms convergence time
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) encompasses IEEE 802.1D STP and IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- Per-VLAN spanning tree (PVST+) and Alcatel-Lucent 1x1 STP mode
- IEEE 802.3ad Link Aggregation Control Protocol (LACP) and static Link Aggregation Groups (LAGs) across modules
- Dual-home link support for sub-second link protection without STP
- Virtual Router Redundancy Protocol (VRRP) to provide highly available routed environments
- Bidirectional Forwarding Detection (BFD) for fast failure detection and reduced re-convergence times in a routed environment
- Broadcast, unknown unicast and multicast storm control to avoid degradation in overall system performance
- Redundant and hot-swappable power supplies, transceiver modules offering uninterruptible service
- Dual image and dual configuration file storage provides backup

## Advanced security

***Access control***

- AOS Access Guardian framework for comprehensive user-policy-based network access control (NAC)
- Autosensing 802.1X multi-client, multi-VLAN support for per-port authentication and VLAN assignment
- MAC-based authentication for non-802.1X hosts
- Web-based authentication (captive portal): Customizable web portal residing on the switch
- IEEE 802.1X and MAC-based authentication, with group mobility and "guest" VLAN support
- Host integrity check (HIC) agent on each switch makes it an HIC enforcer and facilitates endpoint device control for company policy compliance (quarantine and remediation supported, as required)
- User Network Profile (UNP) simplifies NAC by providing dynamic policy configuration for authenticated clients – VLAN, ACL, HIC
- SSH for secure CLI session with public key infrastructure (PKI) support
- TACACS+ client allows for authentication, authorization, and accounting (AAA) with a remote TACACS+ server
- Centralized RADIUS and Lightweight Directory Access Protocol (LDAP) user authentication

***Containment, monitoring and quarantine***

- Support for Alcatel-Lucent OmniVista 2500 Quarantine Manager and quarantine VLAN
- Learned Port Security (LPS) or MAC address lockdown secures network access on user or trunk ports based on MAC address
- DHCP Snooping, DHCP IP/Address Resolution Protocol (ARP) Spoof protection
- Embedded traffic anomaly detection (TAD) monitors traffic patterns typical of worm-like viruses and either shuts down the port or reports to the management system
- ARP poisoning detection
- Support of Microsoft® Network Access Protection (NAP)
- Bridge Protocol Data Unit (BPDU) blocking with auto-recovery automatically shuts down user ports to prevent topology loops if an STP BPDU packet is seen
- STP Root Guard prevents edge devices from becoming STP root nodes

***Traffic filtering***

- ACLs to filter out unwanted traffic including denial of service (DoS) attacks; flow-based filtering in hardware (layer 1 to layer 4)

## Converged networks

***PoE***

- Dynamic PoE allocation, delivers only the power needed up to the total power budget for most efficient power consumption
- PoE models support Alcatel-Lucent IP phones and WLAN access points, as well as any IEEE 802.3af-compliant end device
- Configurable per-port PoE priority and max power for power allocation

***QoS***

- Priority queues: Eight hardware-based queues per port for flexible QoS management
- Traffic prioritization: Flow-based QoS with internal and external prioritization (also known as re-marking)
- Bandwidth management: Flow-based bandwidth management, ingress/egress rate limiting; egress rate shaping per port and per class of service (CoS) queue
- Queue management: Configurable scheduling algorithms – Strict Priority Queuing (SPQ), Weighted Round Robin (WRR), and Deficit Round Robin (DRR) or combination of algorithms
- Congestion avoidance: Support for End-to-End Head-of-Line (E2E-HOL) Blocking prevention and flow control
- LLDP network polices for dynamic designation of VLAN-ID and layer-2/layer-3 priority for IP phones
- Auto-QoS for switch management traffic as well as traffic from Alcatel-Lucent IP phones

## Layer-3 routing and multicast

***IPv4 routing***

- Multiple virtual routing and forwarding (VRF) for network segmentation
- Static routing, Routing Information Protocol (RIP) v1 and v2
- Open Shortest Path First (OSPF) v2, Intermediate System-to-Intermediate System (IS-IS), Border Gateway Protocol (BGP) v4
- Generic Routing Encapsulation (GRE) tunneling
- Graceful restart extensions for OSPF and BGP
- VRRP v2
- DHCP relay (including generic UDP relay)
- ARP
- IP SLA measurement

***IPv6 routing***

- Static routing
- Routing Information Protocol Next Generation (RIPng)
- OSPF v3
- BGP v4 (with extensions to IPv6 routing)
- Graceful restart extensions for OSPF and BGP
- VRRP v3
- Neighbor Discovery Protocol (NDP)

***IPv4/IPv6 Multicast***

- Internet Group Management Protocol (IGMP) v1/v2/v3 snooping for optimized multicast traffic
- Protocol Independent Multicast - Sparse Mode (PIM-SM)/Protocol Independent Multicast - Dense Mode (PIM-DM)
- Distance Vector Multicast Routing Protocol (DVMRP)
- Multicast Listener Discovery (MLD) v1/v2 snooping for optimized multicast traffic

### Metro Ethernet access

- Ethernet services support per IEEE 802.1ad Provider Bridge services (also known as Q-in-Q or VLAN stacking):
  - ¬ Service VLAN (SVLAN) and Customer VLAN (CVLAN) transparent LAN services
  - ¬ Ethernet network-to-network interface (NNI) and user network interface (UNI) services
  - ¬ Service Access Point (SAP) profile identification
  - ¬ CVLAN-to-SVLAN translation
- Ethernet OA&M compliant with ITU Y.1731 and IEEE 802.1ag version 8.1 for connectivity fault and performance management and IEEE 802.3ah EFM for link OA&M
- Service Assurance Agent (SAA) for SLA compliance validation
- Private VLAN feature for user traffic segregation
- MAC-Forced Forwarding support according to RFC 4562
- DHCP Option 82: Configurable relay agent information
- IP Multicast VLAN (IPMVLAN)
- Optimized Ethernet access services delivery
  - ¬ Network bandwidth protection against overload of video traffic
  - ¬ Multicast streams isolation from multiple content providers over the same interface
- MEF 9 and 14 certified
- Managed by Alcatel-Lucent 5620 Service Aware Manager (SAM)

## Supported standards

### IEEE standards

- IEEE 802.1D (STP)
- IEEE 802.1p (CoS)
- IEEE 802.1Q (VLANs)
- IEEE 802.1ad (Provider Bridges)
- IEEE 802.1ag (OA&M Connectivity Fault Management)
- IEEE 802.1ak (Multiple VLAN Registration Protocol)
- IEEE 802.1s (MSTP)
- IEEE 802.1w (RSTP)
- IEEE 802.1X (Port-based Network Access Protocol)
- IEEE 802.3i (10Base-T)
- IEEE 802.3u (Fast Ethernet)
- IEEE 802.3x (Flow Control)
- IEEE 802.3z (Gigabit Ethernet)
- IEEE 802.3ab (1000Base-T)
- IEEE 802.3ac (VLAN Tagging)
- IEEE 802.3ad (Link Aggregation)
- IEEE 802.3ae (10G Ethernet)
- IEEE 802.3af (Power over Ethernet)

### ITU-T recommendations

- ITU-T G.8032: Draft (June 2007) Ethernet Ring Protection
- ITU-T Y.1731 OA&M fault and performance management

### IETF standards

***IPv4***

- RFC 2003 IP/IP Tunneling
- RFC 2784 GRE Tunneling

***OSPF***

- RFC 1253/1850/2328 OSPF v2 and MIB
- RFC 1587/3101 OSPF NSSA Option
- RFC 1765 OSPF Database Overflow
- RFC 2154 OSPF MD5 Signature
- RFC 2370/3630 OSPF Opaque LSA
- RFC 3623 OSPF Graceful Restart

***RIP***

- RFC 1058 RIP v1
- RFC 1722/1723/2453/1724 RIP v2 and MIB
- RFC 1812/2644 IPv4 Router Requirements
- RFC 2080 RIPng for IPv6

***BGP***

- RFC 1269/1657 BGP v3 & v4 MIB
- RFC 1403/1745 BGP/OSPF Interaction
- RFC 1771-1774/2842/2918/3392 BGP v4
- RFC 1965 BGP AS Confederations
- RFC 1966 BGP Route Reflection
- RFC 1997/1998 BGP Communities Attribute
- RFC 2042 BGP New Attribute
- RFC 2385 BGP MD5 Signature
- RFC 2439 BGP Route Flap Damping
- RFC 2545 BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing
- RFC 2796 BGP Route Reflection
- RFC 2858 Multiprotocol Extensions for BGP-4
- RFC 3065 BGP AS Confederations

***IS-IS***

- RFC 1142 OSI IS-IS for Intra-domain Routing Protocol
- RFC 1195 OSI IS-IS for Routing
- RFC 2763 Dynamic Host Name
- RFC 2966 Route Leaking
- RFC 3719 Interoperable Networks
- RFC 3787 Interoperable IP Networks Using IS-IS

***IP multicast***

- RFC 1075 DVMRP
- RFC 1112 IGMP v1
- RFC 2236/2933 IGMP v2 and MIB
- RFC 2362/4601 PIM-SM
- RFC 2365 Multicast
- RFC 2715/2932 Multicast Routing MIB
- RFC 2934 PIM MIB for IPv4
- RFC 3376 IGMPv3
- RFC 5060 Protocol Independent Multicast MIB
- RFC 5132 IP Multicast MIB
- RFC 5240 PIM Bootstrap Router MIB

***IPv6***

- RFC 1886/3596 DNS for IPv6
- RFC 2292/2553/3493/3542 IPv6 Sockets
- RFC 2373/2374/3513/3587 IPv6 Addressing
- RFC 2460/2461/2462/2464 Core IPv6
- RFC 2461 NDP
- RFC 2463/2466/4443 ICMP v6 and MIB
- RFC 2452/2454 IPv6 TCP/UDP MIB
- RFC 2893/4213 IPv6 Transition Mechanisms
- RFC 3056 IPv6 Tunneling
- RFC 3595 TC for Flow Label
- RFC 4007 IPv6 Scoped Address Architecture
- RFC 4193 Unique Local IPv6 Unicast Addresses

***Manageability***

- RFC 854/855 Telnet and Telnet options
- RFC 959/2640 FTP
- RFC 1155/2578-2580 SMI v1 and SMI v2
- RFC 1157/2271 SNMP
- RFC 1212/2737 MIB and MIB-II
- RFC 1213/2011-2013 SNMP v2 MIB
- RFC 1215 Convention for SNMP Traps
- RFC 1350 TFTP Protocol
- RFC 1573/2233/2863 Private Interface MIB
- RFC 1643/2665 Ethernet MIB
- RFC 1750 TFTP Protocol
- RFC 1901-1908/3416-3418 SNMP v2c
- RFC 2096 IP MIB
- RFC 2131 DHCP server/client
- RFC 2570-2576/3411-3415 SNMP v3
- RFC 2616 /2854 HTTP and HTML
- RFC 2667 IP Tunneling MIB
- RFC 2668/3636 IEEE 802.3 MAU MIB
- RFC 2674 VLAN MIB
- RFC 3414 User-based Security Model
- RFC 4251 Secure Shell Protocol Architecture
- RFC 4252 The Secure Shell (SSH) Authentication Protocol
- RFC 4878 OA&M Functions on Ethernet-Like Interfaces

***Security***

- RFC 1321 MD5
- RFC 2104 HMAC Message Authentication
- RFC 2138/2865/2868/3575/2618 RADIUS Authentication and Client MIB
- RFC 2139/2866/2867/2620 RADIUS Accounting and Client MIB
- RFC 2228 FTP Security Extensions
- RFC 2284 PPP EAP
- RFC 2869/2869bis RADIUS Extension

***QoS***

- RFC 896 Congestion Control
- RFC 1122 Internet Hosts
- RFC 2474/2475/2597/3168/3246 DiffServ
- RFC 2697 srTCM
- RFC 2698 trTCM
- RFC 3635 Pause Control

***Others***

- RFC 768 UDP
- RFC 791/894/1024/1349 IP and IP/Ethernet
- RFC 792 ICMP
- RFC 793/1156 TCP/IP and MIB
- RFC 826/903 ARP and Reverse ARP
- RFC 919/922 Broadcasting Internet Datagrams
- RFC 925/1027 Multi LAN ARP/Proxy ARP
- RFC 950 Subnetting
- RFC 951 BOOTP
- RFC 1151 RDP
- RFC 1191/1981 Path MTU Discovery
- RFC 1256 ICMP Router Discovery
- RFC 1305/2030 NTP v3 and Simple NTP
- RFC 1493 Bridge MIB
- RFC 1518/1519 CIDR
- RFC 1541/1542/2131/3396/3442 DHCP
- RFC 1757/2819 RMON and MIB
- RFC 2131/3046 DHCP/BOOTP Relay
- RFC 2132 DHCP Options
- RFC 2251 LDAP v3
- RFC 2338/3768/2787 VRRP and MIB
- RFC 3021 Using 31-bit Prefix
- RFC 3060 Policy Core
- RFC 3176 sFlow
- RFC 4562 Mac-Forced Forwarding

## Ordering information

**Table 4. OmniSwitch 6850 ordering information**

| | |
|---|---|
| **OS6850 NON-PoE BUNDLES** | |
| OS6850-24<br>OS6850-24D | Layer-3 Gigabit Ethernet chassis with 20 RJ-45 ports individually configurable to 10/100/1000Base-T, four combo ports, and two dedicated stacking ports. A 126-W AC or 120-W DC power supply respectively is included in the bundle. |
| OS6850-24X<br>OS6850-24XD | Layer-3 Gigabit Ethernet chassis with 20 RJ-45 ports individually configurable to 10/100/1000Base-T, four combo ports, two 10 Gigabit uplinks, and two dedicated stacking ports. A 126-W AC or 120-W DC power supply respectively is included in the bundle. |
| OS6850-48<br>OS6850-48D | Layer-3 Gigabit Ethernet chassis with 44 RJ-45 ports individually configurable to 10/100/1000Base-T, four combo ports, and two dedicated stacking ports. A 126-W AC or 120-W DC power supply respectively is included in the bundle. |
| OS6850-48X<br>OS6850-48XD | Layer-3 Gigabit Ethernet chassis with 48 RJ-45 ports individually configurable to 10/100/1000Base-T, two 10 Gigabit uplinks, and two dedicated stacking ports. A 126-W AC or 120-W DC power supply respectively is included in the bundle. |
| OS6850-U24X<br>OS6850-U24XD | Layer-3 Gigabit Ethernet chassis with 22 100/1000Base-X SFP ports, two combo ports, two 10 Gigabit uplinks, and two dedicated stacking ports. A 126-W AC or 120-W DC power supply respectively is included in the bundle. |
| **OS6850 PoE BUNDLES** | |
| OS6850-P24<br>OS6850-P24H | PoE Layer-3 Gigabit Ethernet chassis with 20 RJ-45 ports individually configurable to 10/100/1000Base-T, four combo ports, and two dedicated stacking ports. A 360-W AC or 510-W AC power supply respectively is included in the bundle. |
| OS6850-P24X<br>S6850-P24XH | PoE Layer-3 Gigabit Ethernet chassis with 20 RJ-45 ports individually configurable to 10/100/1000Base-T, four combo ports, two 10 Gigabit uplinks, and two dedicated stacking ports. A 360-W AC or 510-W AC power supply respectively is included in the bundle. |
| OS6850-P48<br>OS6850-P48H | PoE Layer-3 Gigabit Ethernet chassis with 44 RJ-45 ports individually configurable to 10/100/1000Base-T, four combo ports, and two dedicated stacking ports. A 360-W AC or 510-W AC power supply respectively is included in the bundle. |
| OS6850-P48X<br>OS6850-P48XH | PoE Layer-3 Gigabit Ethernet chassis with 48 RJ-45 ports individually configurable to 10/100/1000Base-T, two 10 Gigabit uplinks, and two dedicated stacking ports. A 360-W AC or 510-W AC power supply respectively is included in the bundle. |
| **OS6850L BUNDLES** | |
| OS6850-P24L<br>S6850-P24LH | PoE Layer-3 Ethernet chassis with 20 RJ-45 ports individually configurable to 10/100Base-T, four combo ports, and two dedicated stacking ports. The 20 10/100 PoE RJ-45 ports can also operate at Gigabit speed with purchase of the OS6850-24L-UPGD software license. A 360-W AC or 510-W AC power supply respectively is included in the bundle. |
| OS6850-P48L<br>OS6850-P48LH | PoE Layer-3 Ethernet chassis with 44 RJ-45 ports individually configurable to 10/100Base-T, four combo ports, and two dedicated stacking ports. The 44 10/100 PoE RJ-45 ports can also operate at Gigabit speed with purchase of the OS6850-48L-UPGD software license. A 360-W AC or 510-W AC power supply respectively is included in the bundle. |
| OS6850-24L<br>OS6850-24LD | Layer-3 Ethernet chassis with 20 RJ-45 ports individually configurable to 10/100Base-T, four combo ports, and two dedicated stacking ports. The 20 10/100 PoE RJ-45 ports can also operate at Gigabit speed with purchase of the OS6850-24L-UPGD software license. A 126-W AC or 120-W DC power supply respectively is included in the bundle. |
| OS6850-48L<br>OS6850-48LD | Layer-3 Ethernet chassis with 44 RJ-45 ports individually configurable to 10/100Base-T, four combo ports, and two dedicated stacking ports. The 44 10/100 PoE RJ-45 ports can also operate at Gigabit speed with purchase of the OS6850-48L-UPGD software license. A 126-W AC or 120-W DC power supply respectively is included in the bundle. |
| **SOFTWARE** | |
| OS6850-SW-AR | OS6850 Advanced Routing software. Includes support for IPv4 routing protocols OSPFv2, BGPv4, PIM-SM/DM and DVMRP, and support for IPv6 routing protocol OSPFv3. |
| OS6850-24L-UPGD | Software license that allows 10/100 RJ-45 ports of OS6850-24L and OS6850-P24L chassis to operate at Gigabit speed. |
| OS6850-48L-UPGD | Software license that allows 10/100 RJ-45 ports of OS6850-48L and OS6850-P48L chassis to operate at Gigabit speed. |
| OS6850-SW-ENC | Encryption software license for OS6850. This license enables support of IPSec for securing IPv6 routing protocols (RIPng/OSPFv3). |

## Service and support

### Warranty

Limited lifetime hardware warranty: Limited to the original owner and will be provided for up to five years after the product's end-of-sales announcement.

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